



# Australian Government

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## Civil Aviation Safety Authority

Instrument number CASA EX121/15

I, TERENCE LINDSAY FARQUHARSON, Deputy Director of Aviation Safety, a delegate of CASA, make this instrument under regulation 11.160 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*.

**[Signed T. Farquharson]**

Terry Farquharson  
Deputy Director of Aviation Safety

9 July 2015

### **Exemption — operation of UAV at night (Insitu Pacific)**

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#### **1 Application**

This instrument applies to the operation of a remotely piloted multi-rotor (the *UAV*) by Insitu Pacific Pty Ltd, Aviation Reference Number 787789 (the *operator*).

#### **2 Definitions**

In this instrument:

*AMSL* means above means sea level.

*operator's personnel* means a person employed or engaged by the operator to assist in the operation of the UAV.

#### **3 Exemption**

The operator is exempt from paragraph 101.095 (1) (b) of CASR 1998 when operating the UAV.

#### **4 Conditions**

The exemption is subject to the conditions mentioned in Schedules 1 and 2.

#### **5 Expiry**

This instrument expires at the end of August 2015, as if it had been revoked by another instrument.

## Schedule 1      General operational conditions

- 1 The operator may only operate the UAV at night within the confines of the following coordinates (the *operating area*):

<b>Point</b>	<b>Lat (dd° mm' South)</b>	<b>Long (ddd° mm' East)</b>
1	26° 49' S	150° 17' E
2	26° 46' S	150° 27' E
3	27° 20' S	151° 06' E
4	27° 30' S	150° 57' E
5	27° 07' S	150° 31' E
6	27° 00' S	150° 12' E
7	26° 54' S	150° 13' E
8	26° 49' S	150° 17' E

- 2 The operator must ensure that the UAV is not operated above 4 000 feet AMSL, only within the prescribed latitudes and longitudes at clause 1 and that a temporary danger area is activated for that area.
- 3 The operator must only conduct operations when there is an active NOTAM that advises of the UAV operations being conducted in the operating area.
- 4 The operator must provide CASA with the details of each NOTAM that has been issued in relation to UAV operations in the operating area.
- 5 Subject to clause 6, the operator must conduct operations in accordance with its operations manual.
- 6 In the event of an inconsistency between a provision of the operator's operations manual and this instrument, this instrument prevails to the extent of the inconsistency.
- 7 The UAV Controller must hold a UAV Controller's Certificate and have passed the Australian Instrument Rating examination (IREX) or CASA approved equivalent.
- 8 UAV observers must be approved by the operator's Chief UAV Controller in accordance with the operator's internal training and currency procedures.
- 9 The operator must monitor the appropriate aviation frequency relevant to the operating area as well as CTAF and all other aviation frequencies relevant to the UAV operation for traffic information.
- 10 The operator must make position broadcasts at least every 30 minutes on the relevant aviation frequency, using the call sign "Unmanned Scan Eagle" plus a 2-digit tail number.
- 11 If a traffic radio call is received, the UAV Controller must:
  - (a) reply with position, altitude and intentions; and
  - (b) if a conflict is possible — the UAV Controller must ensure conflict resolution.
- 12 The operator must ensure that the UAV is not operated closer than:
  - (a) 500 feet vertically; and

- (b) 1 500 metres horizontally;  
to any aircraft that is within the area of operation.
- 13 The operator must ensure that at least 1 person who is trained as a UAV observer in accordance with the operator's operations manual:
- (a) has continuous 2-way communication with the UAV Controller; and
  - (b) is present in a location that allows the UAV observer to assist with traffic avoidance.
- Note* The UAV observer may be a dedicated person within the Ground Control Station (GCS) monitoring for traffic.
- 14 At all times during a UAV operation, the UAV:
- (a) must have a fully functional and operational transponder (Mode 3A/C) equipped; and
  - (b) must transmit accurate Mode C barometric altitude.
- 15 Subject to clause 16, the operator must ensure that, in the event of:
- (a) a control or data-link loss with the UAV; or
  - (b) loss or degradation of control functionality;
- the UAV has an active primary fail-safe mode which will ensure that the UAV does not increase altitude or depart from the agreed area of operation, and returns to its point of departure or a pre-appointed safe location.
- 16 The operator must ensure that, in the event of complete loss of control of the UAV, the UAV has a secondary or final fail-safe system that can allow the UAV Controller to immediately terminate a UAV operation.
- 17 The operator must document a procedure, to be submitted to CASA, ensuring that a decision to terminate a UAV operation due to loss of control is undertaken in a manner that achieves an acceptable level of safety.

## **Schedule 2 Night operational conditions**

- 1 A risk assessment must be carried out by the UAV Controller before any operation under this exemption.
  - 2 The UAV must have orientation lighting, such as LED lights on the front and rear arms of the UAV.
  - 3 Take-off and landing areas must be illuminated, for example by portable lighting or airfield lighting, so that the position and orientation of the UAV can be established and maintained by visual reference by the UAV Controller.
  - 4 The UAV Controller must ensure that:
    - (a) datalink line of sight contact with the UAV is maintained at all times with the ground control station; and
    - (b) if the control or location of the UAV is lost — the UAV has the capability to return to its point of departure or a pre-appointed safe location; and
    - (c) the UAV is only operated in visual meteorological conditions.
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